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ORIGINAL ARTICLES.

POMPEIAN SURGERY AND SURGICAL INSTRUMENTS.[1]

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A RECENT visit to the ruins of Pompeii and the Naples Museum has enabled me to make a careful examination of the ruined homes and corroded implements of the Pompeian surgeons. A visit of this kind, with its wonderful revelations at every step, is a memorable event in the life of every student of ancient surgery who has enjoyed such an opportunity. Nearly two-thousand years have elapsed since the last surgeons of that ill-fated city practised their art. They perished or fled during that fearful eruption of Vesuvius that wiped out of existence so suddenly the two neighboring cities, Pompeii and Herculaneum, burying the former under a bed of burning ashes and incorporating the latter in a mass of lava. It is interesting to posterity that the city of Pompeii, with all its antique treasures, has been preserved for centuries under this removable mantle of the product of volcanic action, which has made it possible for the interested archeologists of the present century to unveil to us the works of art and science of two-thousand years ago. A walk through the streets of the recently uncovered city of Pompeii brings vividly to the mind of the visitor the life, works, virtues, and vices of its former inhabitants. The old aqueduct that supplied the city with pure water from the mountains is well preserved and remains as one of the marvels of engineering of that time. The pavements of the streets can compare favorably with those of our day. The bare walls of public and private buildings testify to the unrivalled perfection masonry had attained at that day. The crude stone mills operated by human power furnished the city with flour, which in the adjacent bakery was converted into bread.

The enormous wine-jugs, so numerous in places where wine was sold and drunk, remain as lasting mementoes that the Pompeians were by no means prohibitionists. The numerous houses of prostitution, both public and private, remain as silent witnesses of a vice which appeared to have been unusually prevalent at that time. The capacious forum, amphitheater, comic and tragic theaters that remain in a wonderful state of preservation, show that the people of that day—male and female, old and young—enjoyed the glittering stage and the bloody contests of the gladiators. The public bath-house is a marvel of its kind, and it is doubtful if in its artistic design and luxury it could be duplicated to-day. The private dwellings are all constructed on the same plan—masterpieces of comfort and sanitary construction. The numerous fountains furnished pure water for beast and man. The temple of Esculapius is one of the prominent landmarks of the former city, and fortunately time and the elements have dealt gently with its precious contents. In the center of the capacious anteroom stands the altar of pure marble, beautifully carved, at which the priests of old worshipped in the interests of suffering humanity. It is here where the sick, the maimed, and the injured sought relief. As I stood behind the altar where so many of the disciples of Esculapius had stood and performed their sacred functions, it seemed to me that I could hear the pitiable appeals of the suffering Pompeians and the sound advice and sweet words of consolation of the ministering priest. With the temple of Esculapius will always be associated the early history of medicine and the struggle between disease and its successful treatment.

A walk through the narrow, stone-paved streets of the uncovered part of the ruins of Pompeii is necessarily attended with serious thoughts of the past and present. The wider streets show deep grooves made by the chariot-wheels, while the narrower streets were reserved for pedestrians. The one-story buildings, both public and private, show a singular uniformity in their construction—evidence that the Pompeian architects and builders had in view more the comfort and health of their occupants than a desire to exhibit their talent. The many shops in the principal street were the homes and business-places of merchants who supplied the citizens with the luxuries and necessities of life. A large building on the corner of two streets served as a drug-store, where crude drugs were dealt out to those in need of remedial agents. The proprietor of this primitive pharmacy—living, as he did, next door to a

[1] Read before the Alumni Association of Cook County Hospital, November 18, 1895.

public house of prostitution—in order to protect himself and family against intrusion of an undesirable nature, found it necessary to place above the entrance a sign to indicate to the prospective customer the legitimate character of his business, and to direct him properly if he was in search of pleasure.

Before giving a description of the surgical instruments exhumed from the ruins of Pompeii, it is necessary to say something of the city of Pompeii and its destruction.

The temple in the leper forum at Pompeii, generally called "the temple of Hercules," is the oldest extant ruin in the city, and it is safe to say that it is of the same period with the Poestum temples, as it corresponds exactly with them in architecture; hence we may safely date it at 650 B. C., and the history of Pompeii is thus narrowed between that date and 79 A. D., when we know from reliable sources that the final destruction of the city took place. Our inquiry thus extends over a space of about seven hundred years. For the first three-hundred we are in the regions of conjecture; for the last four hundred we are in the realm of authenticated history. When the Greek temple was built at Pompeii the place was in the hands of the Oscans, a pastoral tribe who came down the plains in the winter and fed their flocks in the hills in the summer. The Oscans were driven out of Campania in 420 B. C. by the Samnites, a tribe of hardy mountaineers who attained the height of their power about 350 B. C. and built a great part of Pompeii. The Samnites practically built the city; and wherever we find houses built of large blocks of stone, neatly joined together without mortar, we may safely predict their Samnite origin. Their work was all in the Doric style, and it was the Romans who covered it with stucco, transformed it into the Ionic style, and decorated it with tracery and paintings. The Romans occupied Campania in 88 B. C., and thereafter Pompeii takes its place in Roman history, and is frequently mentioned by Seneca, Pliny, and other contemporary writers. Toward the close of Nero's reign—that is to say, in the year 63 A. D.—the whole region was visited by severe earthquakes, which made such havoc that the cities were deserted for several years. The rebuilding of Pompeii appears to have been begun about 69 A. D., ten years before its final destruction, which took place on the 23d of November, 79 A. D. and appears to have commenced in the afternoon. It is well to observe that although Herculaneum and Pompeii were destroyed by the same eruption, they were destroyed in quite different ways. The former was filled up by a flow of warm, muddy water, which filled it with a soft paste; and subsequent eruptions have covered it with molten lava no less than eleven times, rendering excavation exceedingly difficult and costly. Pompeii, on the other hand, was covered with loose ashes and pumice-stone, which were ejected from the volcano to a considerable height and blown into the city by the violent northwesterly gale which Pliny tells us was raging at that time. In short, Pompeii can be excavated with a trowel, but it takes a chisel to make an impression on Herculaneum.

Lord Lytton has given us in his fascinating novel, *The Last Days of Pompeii*, a graphic and what must be considered as a correct description of the destruction of Pompeii. He connects the beginning of the terrible catastrophe with a public play in which Arbaces, the Egyptian, was to be turned over to the lion by the angry assembled multitude. The helpless Egyptian heard the shouting of the bloodthirsty audience and the roaring of the hungry lions, eager for their human prey, when he stretched his hand on high; over his lofty brow and royal features there came an expression of unutterable solemnity and command. "Behold!" he shouted with a voice of thunder, which stilled the roar of the crowd; "behold how the gods protect the guiltless! The fires of the avenging Orcus burst forth against the false witness of my accusers!"

The eyes of the crowd followed the gesture of the Egyptian and beheld, with ineffable dismay, a vast vapor shooting from the summit of Vesuvius in the form of a gigantic pine-tree; the trunk, blackness; the branches, fire!—a fire that shifted and wavered in its hues with every moment; now fiercely luminous, now of a dull and dying red, that again blazed terrifically forth with intolerable glare.

There was a dead, heart-sunken silence, through which there suddenly broke the roar of the lion, which was echoed back from within the building by the sharper and fiercer yells of its fellow-beast. Dread seers were they of the burden of the atmosphere, and wild prophets of the wrath to come! Then there arose on high the universal shrieks of women; the men stared at each other, but were dumb. At that moment they felt the earth quake beneath their feet; the walls of the theater trembled; and, beyond in the distance, they heard the crash of falling roofs. An instant more and the mountain cloud seemed to roll toward them, dark and rapid, like a torrent; at the same time it cast forth from its bosom a shower of ashes mixed with vast fragments of burning stone.

Over the crushing vines, over the desolate streets, over the amphitheater itself, far and wide, with many a mighty splash in the agitated sea, fell that awful shower. No longer thought the crowd of justice or Arbaces. Safety for themselves was their sole thought. Each turned to fly—each dashing, pressing, crushing against the other. Trampling recklessly over the fallen, amidst groans and oaths, and

prayers, and sudden shrieks, the enormous crowd vomited itself forth through the numerous passages. Whither should they fly? Some, anticipating a second earthquake, hastened to their homes to load themselves with their more costly goods, and escape while it was yet time; others, dreading the showers of ashes that now fell first, torrent upon torrent, over the streets, rushed under the roofs of the nearest houses, or temples, or sheds—shelter of any kind—for protection from the terrors of the open air. But darker, and larger, and mightier spread the cloud above them. It was sudden and more ghastly night rushing upon the realm of noon! Darkness reigned, interrupted only by the occasional column of fire which escaped from the volcano and the frequent lightning that encircled and illuminated momentarily the mountain, which was the central point of the fearful panorama.

Pompeii had no street-lights. The frightened inhabitants brought their oil-lamps into requisition to expedite their flight. Frequently, by the momentary light of these torches, parties of fugitives encountered each other, some hurrying toward the sea, others flying from the sea back to the land; for the ocean had retreated rapidly from the shore—an utter darkness lay over it, and, upon its groaning and tossing waves, the storm of cinders and rock fell without the protection which the streets and roofs afforded to the land. Wild, haggard, ghastly with supernatural fears, these groups encountered each other, but without the leisure to speak, to consult, to advise; for the showers fell now frequently, though not continuously, extinguishing the lights, which showed to each other the death-like faces of the other, and hurrying all to seek refuge beneath the nearest shelter. The whole elements of civilization were broken up. Ever and anon, by the flickering lights, one saw the thief hastening by the most solemn authorities of the law, laden with, and fearfully chuckling over, the produce of his sudden gains! If, in the darkness, wife was separated from husband or parent from child, vain was the hope of reunion. Each hurried blindly and confusedly on. Nothing in all the various and complicated machinery of social life was left save the primal law of self-preservation!

It was under such circumstances that the city of Pompeii, with such of the inhabitants who failed to escape, was buried and preserved for futurity. The bodies of human beings and animals were charred by the heat, but their forms have been preserved as in a mold by the fiery ashes which fell around and upon them. We thus find in the museums at Pompeii and Naples the size and form of the victims of the eruption preserved to perfection by the substitution of plaster-of-Paris for the original mold. Without such a support the remains on exposure would crumble into dust. At the time of destruction, November 23, 79 A. D., Pompeii is said to have had about 30,000 inhabitants. The number of those who died and were buried in the ruins will never be ascertained. Up to 1824, 350 skeletons were found. Many have been discovered since that time, and many remain in the unexplored part of the city, while the remains of many have been removed with the detritus, unrecognized. It is, however, safe to assume that more than one-half of the population escaped the fiery death and sought shelter in the surrounding country. There is no doubt that soon after the disaster many of the Pompeians rescued a large portion of their valuables from their ruined houses, but the site of the city remained lost for many centuries.

Excavation. The first discovery of the ruins of Pompeii was made in 1595; and the first attempt at excavation was made in 1748. But it was not until 1860 that systematic exploration was pursued, and since then it has been scientifically carried on as far as means and opportunity have permitted. It is estimated that the whole of Pompeii will be cleared in about fifty years' time. At the time of my visit to the ruins, excavation was in active progress. With pick-ax and shovel the ashes and pumice-stone which cover and fill the streets and houses are loosened, and a small army of boys is employed to convey the same in baskets to hand-carts, which are propelled by hand-power, over a temporary railway-track. The workmen at this time were engaged in cleaning a large house, evidently an aristocratic residence, with walls and ceilings beautifully decorated by paintings, representing female beauty and animal life. The pictures are so well preserved that it seems almost next to impossible to realize that the artist and former owner are dead, and that they have been buried in the ruins for nearly two-thousand years. At this place the houses are about ten feet under the surface of the soil. The workmen exercise great care in bringing all objects of interest in as perfect a condition as possible to the surface, after which they are brought to the museum at Naples, where they are examined, classified, and deposited in their appropriate places. The Naples Museum has become a great treasure house, in which the students of ancient history for ages to come will have an opportunity to study the interesting lesson of the high civilization of remote ages.

The objects of special interest to the surgeon in this great collection of ancient art are contained in a glass case, and are properly numbered and described in the catalog. They are the

Surgical Instruments. These instruments were found in a house which has since been called the "Surgeon's House." They are made of bronze, and some of them show a high degree of artistic workmanship. Some of them show the destructive

effect of heat and oxidation, while others are in a state of excellent preservation, as will be seen from the illustrations. The illustrations are taken from specimens from the Naples Museum by Domenico Monaco and E. Neville Rolfe, Naples, 1895.

A quadrivalve speculum, which is one of the most interesting and perfect specimens of the collection, is, unfortunately, not among the illustrations.

a. Actual cautery. Length 10 in. (Off. No. 78,034.)

b. Bivalve speculum working on a central pivot. Length 6 in. Width, when open, 2½ in. (Off. No. 7831.)

c. Scissors with a spring-like shears. Length 4 in. (Off. No. 78,005.)

d. A male catheter which is almost a fac-simile of the one devised by J. L. Petit in the last century. At the closed end is an eye, as in the modern instrument. Length 10½ in. (Off. No. 78,026.)

e. Hook. Length 6 in. (Off. No. 78,056.)

f. Point of injection-syringe, with eight small perforations near the distal end. The other end was, no doubt, filled with a syringe. Length 6 in. (Off. No. 78,235.)

g. Pompeian forceps, formed of two branches, crossing and working on a pivot. Each branch is fitted with an engine-turned handle and a spoon-shaped blade. A powerful forceps, undoubtedly used for the extraction of foreign bodies. Length 8 in. (Off. No. 8 in.)

h. Forceps with serrated bite. Length 4½ in. (Off. No. 78,032.)

i. Cupping-glass of bronze. Height 6 in., diameter 3 in. (Off. No. 77,991.)

j. Medicine-box with medicines, 5 x 3 in. (Off. No. 78,199.)

k. Spatula for mixing ointments. Length 7 in. (Off. No. 77,726.)

l. Lancet for bleeding. Length 5 in. (Off. No. 78,003.)

m. Fleam for bleeding horses. Length 5½ in. (Off. No. 78,007.)

n. Forceps. Length 4½ in. (Off. No. 77,982.)

o. Toothed dissecting-forceps with the engraved name, A. C. A. A : G. L. V. S. F. Length 7½ in. (Off. No. 77,985.)

p. Trocar for tapping, with a hole at the end for the escape of the fluid. Length 5 in. (Off. No. 78,008.)

q. Small spoon with bone handle, ending in the head of a ram. Length 5½ in. (Off. No. 78,000.)

r. Female catheter. Length 4 in. (Off. No. 78,027.)

s. Bistoury, the blade oxidized and the handle in bronze. Length 5¾ in. (Off. No. 77,637.)

t. Trivalve speculum, an instrument which, like the bivalve and the quadrivalve, has been much discussed by archeologists and physicians. It is composed of three valves standing at right angles to the rest of the instrument, and jointly dependent on one another in the expansion transmitted only to one of them. By turning the screw one valve is drawn nearer the operator, and this forces the other two to open in a sidelong direction. The instrument can be held by the two curved handles with the left hand, while the right hand turns the screw. Length 8¼ in.; widest expansion of the valves 1½ in. (Off. No. 78,030.)

u. Spatula. Length 7 in. (Off. No. 78,733)

v. A metallic case containing surgical instruments. Length 8 x ¾ in. (Off. No. 77,144.)

These are some of the most important instruments found in the ruins of Pompeii, and which were employed by our ancestors two-thousand years ago in the practice of surgery. I searched carefully, but without avail, for traces of needles or something else which would indicate that at that time wounds were sutured. The collection contains no saws, trephines, chisels, or any other instruments for operations upon bones. All of the instruments with the exception of the specula and catheters are diminutive in size as compared with the same instruments of less remote and modern times. The absence of saws and chisels is noteworthy, as among the agricultural instruments these tools are represented by specimens of a high degree of perfection.

In the writings of Hippocrates raspatories, mallet, and trephine are mentioned, and consequently must have been used in operations upon bones other than those of the skull. Hippocrates gives very minute directions as to the use of the trephine in the treatment of fractures of the skull: "With regard to trepanning, when there is a necessity for it, the following particulars should be known: If you have had the management of the case from the first, you must not at once saw the bone down to the meninx, for it is not proper that the membrane should be laid bare and exposed to injuries for a length of time, as in the end it may become fungous. And there is another danger if you saw the bone down to the meninx and remove it at once, lest in the act of sawing you should wound the meninx. But in trepanning, when only a very little of the bone remains to be sawed through, and the bone can be moved, you must desist from sawing, and leave the bone to fall out of itself. For to a bone not sawed through, and where a portion is left of the sawing, no mischief can happen; for the portion now left is sufficiently thin. In other respects you must conduct the treatment as may appear suitable to the wound, and in trepanning you must frequently remove the trepan, on account of the heat in the bone, and plunge it into cold water. For the trepan, being heated by running round, and heating and drying the bone,

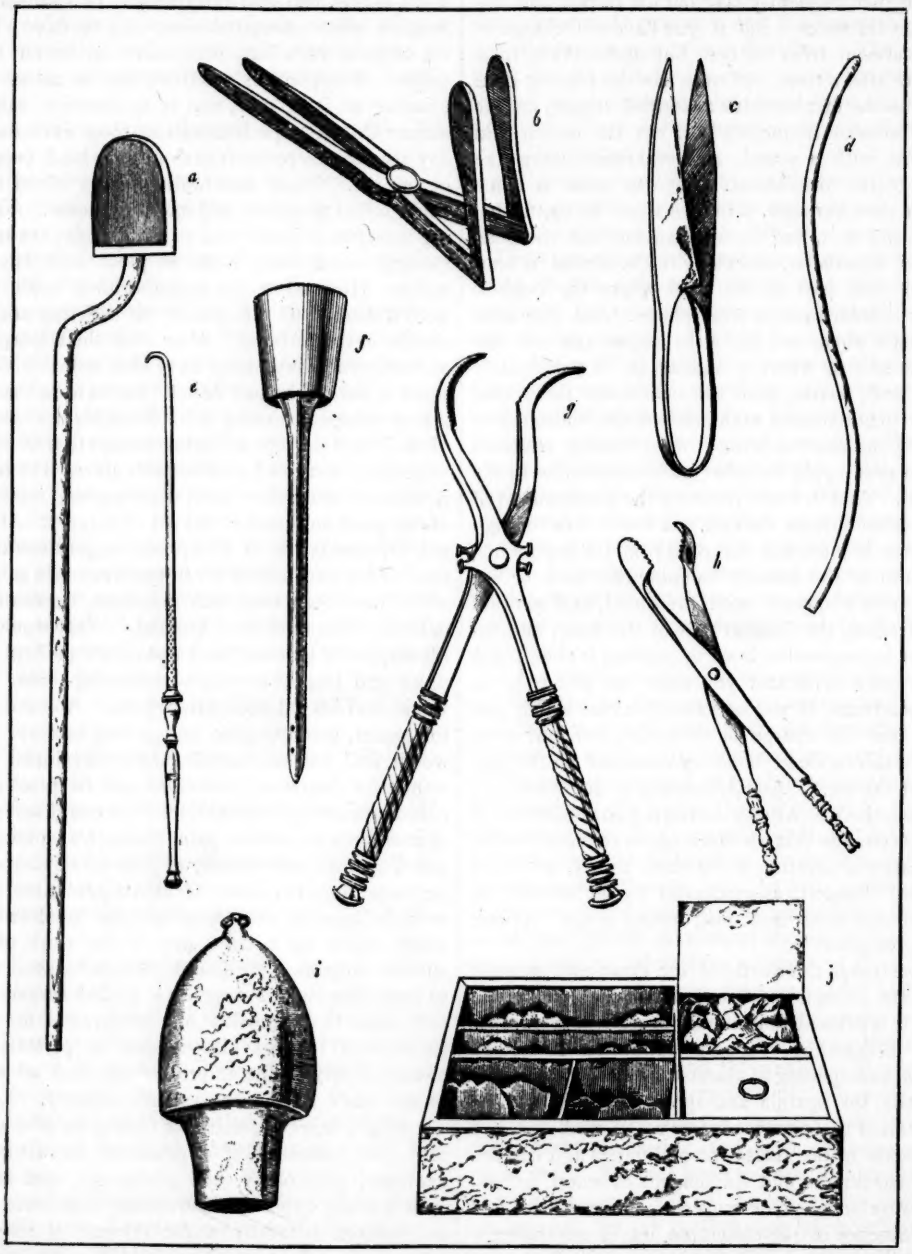
burns it and makes a larger piece of bone around the sawing to drop off than would otherwise do. And if you wish to saw at once down to the membrane and then remove the bone, you must also in like manner frequently take out the trepan and dip it into cold water. But if you have not charge of the treatment from the first, but undertake it from another after a time, you must saw the bone at once down to the meninx with a serrated trepan, and in doing so must frequently take out the trepan and examine with a sound, and otherwise along the track of the instrument. For the bone is much sooner sawn through, provided there be matter below it and in it, and it often happens that the bone is more superficial, especially if the wound is situated in that part of the head where the bone is rather thinner than in other places. But you must take care where you apply the trepan and see that you do so only where it appears to be particularly thick, and, having fixed the instrument there, that you frequently make examinations and endeavor by moving the bone to bring it up. Having removed it, you must apply the other suitable remedies to the wound. And if, when you have the management of the treatment from the first, you wish to saw through the bone at once and remove it from the membrane, you must in like manner examine the track of the instrument frequently with the sound, and see that it is fixed on the thickest part of the bone, and endeavor to remove the bone by moving it about. But if you use a perforator you must not penetrate to the membrane, if you operate on a case which you have had the charge of from the first, but must leave a thin scale of bone, as described in the process of sawing." As Hippocrates at one time lived and practised in Athens during a great epidemic, it appears strange that his teachings in reference to the treatment of injuries of the skull should not have reached Pompeii, as evidenced by the absence of trepans and other bone-instruments in the "House of the Surgeon."

If we judge the worth of the Pompeian surgeon from the collection of instruments he left behind him, it is evident that bloody operations were confined to bleeding, cupping, extraction of foreign bodies, and opening of abscesses. The metallic medicine-box, the spatula and spoon indicate that the surgeons of that time made free use of medicines and ointments in the treatment of injuries and disease. The instruments and implements of wood, splints, etc., were of course destroyed by fire and heat, and their absence in the collection leaves undoubtedly a large gap in the surgical resources of the Pompeian surgeon.

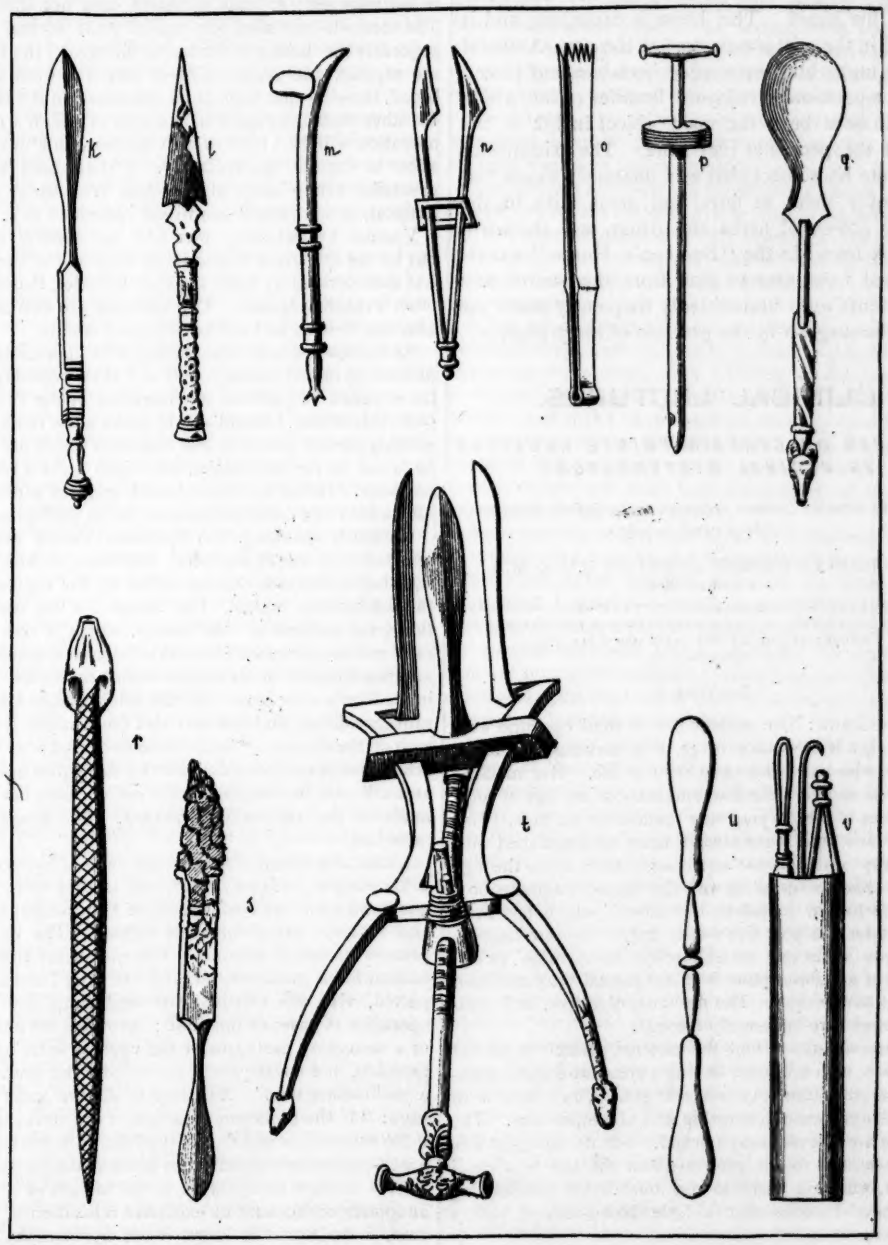
Surgeon's House. The surgeon's house does not differ from the private houses in its vicinity. It is roofless like the rest, all that remains being the bare walls. It is here that most of the surgical instruments were found. This house was undoubtedly occupied by the principal surgeon of Pompeii, who ministered to those in need of surgical aid. It is here that bleeding and cupping were practised for all kinds of ills, real and imaginary. It is difficult to imagine what transpired from day to day. That the surgeon was a busy man there can be but little doubt. Competition was then not as active and pressing as it is now, and it is therefore safe to assume that the capacious waiting-room was crowded day after day by patients anxious to be bled, cupped, or burned. These bare walls, if they could talk, could tell of many sad and exciting scenes. Fainting from loss of blood and writhing under the actual cautery, must have been frequent and familiar sights. How often the neighborhood must have been disturbed by the cries of the suffering and the shrieks of the tortured! How often the atmosphere and adjacent streets must have been stifled with the smell of burned human flesh! Let us hope that the master escaped, leaving in his haste his instruments of skill and torture as lasting mementoes of his so suddenly interrupted professional career. The house is deserted and silent now, a permanent reminder of the great antiquity of the art of surgery. If the last representative of Pompeian surgery could return to-day and behold the improvements in surgery which have been made since his time, he would indeed be astonished and amazed. What would be his surprise if he could visit one of our modern hospitals and inspect an aseptic operating-room. He would find his old occupation gone. No need now for lancet, cupping-glass, and actual cautery. He would find the science of surgery developed to a wonderful degree of perfection and its practice in consonance with its principles. He could make use of anesthesia to prevent pain, Esmarch's bandage to guard against hemorrhage, and operate under aseptic precautions to protect accidental and intentional wounds against complications the treatment of which made up a large part of the work of the ancient surgeon. He would perhaps be astonished to learn that since Pompeii was buried surgery not only came to a standstill, but retrograded for centuries, and that its present state of perfection is owing largely to the improvements and advancements made during the present century. Let us not forget, however, that our colleagues of the distant past, possessed of a primitive knowledge of anatomy, physiology, and pathology, and armed with few and imperfect instruments to practise their art, labored faithfully in the interest of suffering humanity, and unquestionably did much toward prolonging the lives and adding to the comfort and happiness of those who were intrusted to their care.

Pompeian Surgery. There can be but little doubt that the Pompeian surgeons practised surgery in accordance with the teachings of Hippocrates.

Hippocrates, who is justly entitled to be called the father of medicine, was born on the island of Cos, 450 B. C.; hence his lifework was contemporaneous with the early history of Pompeii. It is not difficult to conceive that his teachings penetrated to this city, or that some of its surgeons might have been his pupils. In all probability, Pompeian surgery was Hippocratic surgery. As has been remarked before, the instruments which have been recovered from its ruins so far seem to indicate that no major operations were performed at that time, and that the surgeon's work was limited to cupping, bleeding, the treatment of injuries, and the performance of minor operations. The discovery of a number of very ingenious specula in the "House of the Surgeon" furnishes us with positive evidence that at that time gynecology was not practised as a specialty, but constituted a legitimate part of the sur-



geon's work. Considering the character of the moral atmosphere of Pompeii, it is not astonishing to learn that diseases of the genito-urinary organs taxed the ingenuity and occupied much of the time and attention of its surgeons, as shown by the different kinds of specula then in use and the wonderfully perfect construction of the male and female catheter. The numerous wine-shops and houses of prostitution, private and public, that constitute such a conspicuous part of the ruins of Pompeii, stand as lasting monuments of the debauchery and licentiousness of its former inhabitants, and furnish a satisfactory explanation of the prevalence of genito-urinary diseases among males and females, and which so often necessitated the services of a surgeon. The fleam for bleeding horses found in the instrumentarium of the Pompeian surgeon goes to show that he extended his sphere of usefulness to



the domestic animals, which furnished him with an additional field for observation and undoubtedly added materially to his income. That the surgeon of Pompeii was a man of means and good social position is amply testified to by the size and location of his house. This house is capacious, and is located in the aristocratic part of the city. A liberal income undoubtedly rewarded his labors and placed him in a position to enjoy the luxuries of life, which seems to have been the main object in life of the mass of the people at that time. The existence of a separate house occupied as a pharmacy shows that the people then, as now, had great faith in the healing powers of herbs and drugs, and the medicine-box found in the "Surgeon's House" was replenished from time to time from this source, and its contents were undoubtedly frequently made use of by the surgeon in the practice of his profession.

CLINICAL LECTURES.

REMARKS ON CERTAIN POINTS RELATING TO VAGINAL HYSTERECTOMY.

Being two Clinical Lectures delivered at the Suffolk Dispensary, October 12 and 19, 1895.

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LECTURE I.

GENTLEMEN: The patient that I shall examine with you to-day is a woman of 42, a housekeeper; a *virgo intacta* who has led a most regular life. Her medical history is meager; she had smallpox at the age of four, the traces of which you may remark on her face. Her genital functions have always been accomplished with regularity and *without any complication*, since the age of 13. She comes to us with the vague symptoms of a "sore feeling in the pelvis, low down," which has been present for the past five weeks only. Let me impress upon you again that no leukorrhea, hemorrhage, or discharge of any description from the genital tract has been present at any time. The nervous, digestive, and urinary systems are apparently normal.

On examination I find the external genitals in perfect condition, with a hymen having a crescent-shaped opening just admitting my index-finger. The uterus is in normal anteversion, movable and of proper size. The adnexa are in every way normal. But on the right side of the cervix I find a growth about the size of a small walnut, which is fleshy to the touch. On withdrawing my finger I notice that a little blood-stained mucus covers it.

Now what does this growth signify, and in what way can we connect the soreness in the pelvis with the neoplasm on the cervix? I believe, and many similar cases which I have seen and operated on go to bear out this statement, that we are in presence of a carcinoma at its début, and my fears are still more increased from the fact that the patient's mother was afflicted with a malignant tumor of the breast from which she afterward died.

The soreness in the pelvis is probably due to an infiltration of the corpus uteri, the increase in the weight of which pulls on the broad ligaments, although the organ is not enlarged; at least palpation does not show this. The uterus is movable, the vaginal walls normal; consequently the disease is limited to the organ; the bowels are regular, and stools painless and free from pus or blood, showing that there is no metastasis in the rectum. In other words, we have here a case in which a radical operation will be crowned with success, and this operation is vaginal hysterectomy. I shall perform this operation before some of you next Wednesday at the hospital, as the patient has wisely consented to it.

Vaginal hysterectomy was first successfully carried out by the illustrious Récamier in 1829, and of late years has been revived by Péan, Segond, Richelot, Poucel, and other French surgeons. The Germans are also copying after the French and are having good results.

As the operation is commencing to be appreciated and performed in this country, and as I shall probably have the occasion to perform the operation before you quite often this winter, I would like to make a few remarks regarding certain points in this operation which are not to be found in the text-books, but which have a real importance. In the first place, let me speak of some of the indications and contraindications for its performance.

Generally speaking, this operation should never be resorted to in recent puerperal infections, in which case it is better to drain the pus either by the vagina or by the suprapubic region. The reason for this resides in the great softness of the uterus, which is one of the most serious complications met in vaginal hysterectomy, and this friability of the tissues attains the highest degree immediately after labor. All the pelvic tissues are in the same condition, and will tear and crush under the pressure of the clamps. Under these circumstances hysterectomy becomes a very difficult and dangerous operation, and will only be completed after serious tears have been made in the surrounding viscera. The prognosis is most bad.

I wish to emphatically state that vaginal hysterectomy will not cure *prolapsus uteri*, and in this opinion I do not stand alone, as Prof. Poucel, of Montpellier, Bouilly, and Richelot are of the same opinion. The latter expresses himself as follows: "The extirpation that I performed for a prolapsus showed me what I already suspected, viz., the relative ease and simplicity of the operation in cases of this kind; secondly, the possibility of a secondary prolapsus of the vaginal walls after extirpation, and consequently to consider the operation as a preliminary one." And further on the same author says: "If the prolapsus is simple, if the uterus is small, if the exuberance and flaccidity of the walls are not great, a well-performed colporrhaphy is the treatment *par excellence*. If there be doubt as to the success of a vaginal anaplasty on account of excessive relaxation of the tissues, if the uterus is large, if the hypertrophy of the cervix leads one to believe that the size and weight of the organ might interfere with reunion or favor a relapse, auxiliary means may be resorted to, the anaplasty remaining the base of the treatment."

The clinical signs of uterine carcinoma, that of the cervix, and still more that of the corpus, are more diffi-

cult of recognition than would be supposed. The pains experienced on the internal aspect of the thighs, the induration, hemorrhages, fetid discharges, are not pathognomonic of this disease even if they should all be present in the same patient. You may meet all these symptoms in cases of cervical metritis, with ulcerations, but this affection is not carcinoma, although, let me add, it certainly prepares the ground for a malignant growth more or less rapidly.

Now, gentlemen, it is precisely in these cases that an early vaginal hysterectomy gives wonderful results. These patients, who are sometimes prematurely in a state of cachexia as much from mental as from physical suffering, come back to good health with surprising rapidity after the operation.

In advanced carcinoma one of the greatest operative difficulties is caused by the invasion of the adnexa by the neoplasm, as well as from the slight cohesion of the uterine tissue, which in some cases is so very advanced that the cervix will tear away from the corpus when the former is seized and drawn down with the forceps. In these cases the operation is in no way justifiable, as a recurrence of the disease is sure to soon appear, but the thorough use of the curet is decidedly indicated and will go far in relieving the patient's sufferings.

But when the neoplasm is limited to the cervix and has not invaded the vaginal mucous membrane, the operation should be performed, with splendid results.

Another class of cases, few in number, it is true, requiring vaginal hysterectomy are those suffering from hemorrhagic metritis; but only when the patient is in a state of anemia due to prolonged hemorrhages which have resisted all other minor treatment, such as curettement, cauterization of the endometrium with a Paquelin, should this operation be resorted to.

As to fibroids, we have two classes: those having an abdominal and those a pelvic evolution. Those of the first class, unless they are small, are better treated, I believe, by the abdominal route. If it is decided to remove the uterus through the vagina, one will find that the operation will be greatly facilitated by an anterior hemisection. If the fibroid is in the pelvis, two alternatives present themselves. The neoplasm either projects into the uterine cavity and dilates the cervix or it grows up toward the broad ligaments. In the first variety one will easily remove the uterus by morcellement through the vagina; but, in the second, a selection between the abdominal and vaginal methods must be made, and which should be based on the mortality or the wedging in of the growth in the pelvis.

If you have to do with multiple fibroids, and if you are able to detect that they are scattered through the broad ligaments, I should advise the abdominal route, because the application of the clamps will be found very difficult.

There is a relatively frequent affection, and one most embarrassing for the surgeon to treat, on account of its benign nature, on the one hand, and, on the other, the gravity of the operation necessary for its cure. This affection is what I term microcystic degeneration of the ovary. This lesion is the cause of severe and always increasing pain. Usually only one ovary is the seat of this pathologic condition in the beginning, but soon the other organ becomes degenerated in the same manner. Now, when both ovaries are involved, vaginal hysterectomy is indicated, and when performed will give the patient rapid and complete recovery. When you have decided to perform a vaginal hysterectomy, and the reasons for the operation are considered sufficient, the qnestion comes, At what time can and should this be performed? Of course, if the poor general health of your patient is the result of the lesion, there should be no hesitation on your part, for by putting the operation off until later you diminish the chance of success. But if the general condition depends on some intercurrent acute disease, you naturally should wait until all the symptoms have disappeared and then put your patient on tonic treatment before operating.

Scrofula and commencing tuberculosis are not contraindications for the performance of vaginal hysterectomy, for, as Ferrier remarks, it is only superficial wounds, involving the skin alone, that take on an abnormal evolution in these subjects. Deep wounds, on the contrary, heal normally.

It has been upheld by some surgeons that a surgical operation may cause an acceleration in the progress of a beginning tuberculosis, even inducing its development, particularly in the form of meningitis. I believe from certain cases that I have observed that this may be true of tuberculous lesions of the bones, but, when the general health of the patient is not too poor, I certainly think that no danger will result from the removal of the genital organs through the vagina.

As to syphilis, if it is considered as a diathesis, which is certainly the case in the congenital form, or as an intoxication, as the acquired form has the right to be considered, I think it well that every syphilitic patient who is to undergo a vaginal hysterectomy should be put on specific treatment *before and after* the operation. You will thus avoid secondary hemorrhage and the tenacious neuralgias that occur early or late after a surgical traumatism inflicted on syphilitics.

Malaria of any notable gravity is very infrequent in this part of the country; still, as some of you may hereafter practice in places where this disease is frequent, I will say a few words regarding it. A patient suffering from this affection should be given quinin in full doses, combined with strychnin and arsenic before and after operation, because malaria may produce local or general complications. For the first you have pain and hemorrhage; for the second, a simple intermittent, remittent, or even pernicious fever. In the period of malarial cachexia, erysipelas, gangrene, septicemia, or pyemia might be set up in spite of the most careful asepsis; consequently you would do better to put off the operation until the general condition of the patient is improved.

You have heard me often insist upon the absolute necessity of making a urinalysis in all cases demanding a surgical operation. The smallest wound may be the cause of death in diabetes; a pin-prick, removal of a corn, the extirpation of a chancroid of the face, may be followed by phlegmonous erysipelas or gangrene, soon resulting in death. I think, therefore, that diabetes is a contraindication for vaginal hysterectomy, or at least temporarily so; a considerable reduction in the amount of sugar must be obtained by well-directed treatment before performing this operation. There are, however, two classes of diabetic patients from the surgical point of view—firstly, those in whom a surgical traumatism will result in gangrene, and, secondly, those patients that are in no way influenced in their recovery by their dia-

betes. Those of the first class offer an excellent culture-ground for staphylococci and streptococci, although the result of their urinalysis in no way differs from that of the second class of diabetics who can undergo surgical interference without disaster.

It is, however, a safe rule never to perform vaginal hysterectomy on a diabetic subject, for you cannot tell beforehand to which class the patient may belong.

If you are in the presence of albuminuria, remember that any traumatism will increase it. The different renal diseases render the prognosis of a surgical operation more serious in direct proportion to their own degree of severity. Parenchymatous nephritis and amyloid degeneration are of far greater import than sclerosis. Bilateral hydronephrosis is, of course, more serious than when only one organ is the seat of the trouble, but even the latter condition renders the prognosis far from good. I would advise you to leave your patient alone if she presents any organic disease of the kidneys, as an operation of the importance of vaginal hysterectomy will in no manner improve her condition.

Among the diseases of the blood I wish only to speak of hemophilia as having any direct bearing on the operation under consideration. In subjects afflicted with this diathesis, primary and secondary hemorrhages are to be feared. The last mentioned are the most to be dreaded, and are more frequent than primary hemorrhage. They may occur when cicatrization is about complete. Hemophilia is a contraindication for vaginal hysterectomy, unless you have the time to build your patient up in order to forestand the shock. This is accomplished by subcutaneous injections of ergotin and artificial serum. Sulphuric acid in the form of a drink is highly recommended by Salvy as giving excellent results.

Pulmonary diseases, as bronchitis, influenza, etc., even when slight, may cause coughing-spells, which are very bad after vaginal hysterectomy; so that it is better to postpone the operation until the bronchial mucous membrane is less irritable. The only disease of the liver which concerns us as gynecologists is biliary lithiasis and congestion of the liver. The coexistence of the former affection with lesions of the uterus and adnexa is much more frequent than is usually supposed, and I wish here to call your attention to certain facts which have been put forth by Prof. Poucel, of Montpellier, as they are not generally known, and are certainly worthy of serious consideration.

The liver in a state of congestion compresses the vena cava, and in this way mechanically acts on the general circulation. We can thus explain the uteroovarian congestions nearly always present, and which predispose the patient to hemorrhages; acute metritis, with all its consequences; ulcerations, versions, degenerations of various types, congestive hypertrophy, catarrh of the uterus, with shedding of the ciliated epithelium, which latter is considered by Poucel as the most common cause of sterility. This chronic uteroovarian congestion is still better explained by the anastomoses existing between the veins of the cervix and the internal hemorrhoidal; it is the usual cause of abortion by apoplexy of the placenta, the same as hepatorenal congestion is the cause of puerperal albuminuria and eclampsia. Now, if these hepatic troubles are overlooked, the surgeon will often find that the pains which were thought to be due to lesions of the adnexa persist, even after the nicest operation, and it is for this reason that I wished to call your attention to this theory, which certainly is based on much observation.

Another important question to be considered is that of menstruation. If your patient has passed the menopause, any day will do for the performance of vaginal hysterectomy. But if the woman is still having her menses, the operation should *never* be performed during the menstrual period unless the case should be an urgent one, for instance, with an enormous quantity of pus and a generally bad state of health, in which case an immediate operation may have an excellent effect. However, if there is no urgent symptom, you should perform the operation about forty-eight hours after the menses have ceased. Otherwise your patient will be exposed to severe and obstinate hemorrhage. The studies of Cauchois and Louge on the pulse during menstruation have conclusively demonstrated that the increase of tension in the circulation is a constant phenomenon attending the menstrual periods. If this operation is performed two or three days before the menses, the vaginal incision will bleed very freely, and hemostasis is more difficult to obtain. The blood, moreover, appears more watery, and the uterus, too, bleeds to a far greater extent. But it is especially on removal of the clamps that the bleeding becomes serious, and may even necessitate a complete tamponade. Consequently, if you do this operation, do not forget to wait until menses are over, if they are near at hand.

A few words now regarding the instruments necessary and the preparation of the patient..

The instruments that are necessary are: two long and two short valves, four pairs of hysterectomy-forceps, 6 long clamps, 6 short clamps, 4 Segond's ligament-clamps, one pair each of stout curved and straight scissors, 6 pairs of long, thin clamps with *gold-washed* handles for tampons, and on the absolute necessity of these latter I particularly insist, as they save an enormous amount of time, to say nothing of trouble; and, lastly, a straight knife mounted on a long handle, Segond's curved knives for "*conoid excision*," and a Garceau's hooked sound-director, a most useful instrument which I have employed with the greatest satisfaction.

The number of tampons, which should be made of *gauze*, is as follows: 6 tampons 5 x 5 inches for pressing back the intestine, and 40 gauze tampons 3 x 3 inches for removing blood, etc., and keeping the field of operation clean, a most essential thing, because in vaginal hysterectomy you should see every organ and tissue before proceeding.

The tampons are then sterilized by dry heat at 100° C.

The sutures that I employ for this and every operation are of *silk*. The simplest way of rendering them perfectly sterile is to boil them for one hour in a 1 : 2000 mercuric-chlorid solution and *in the glass test-tube in which the spools are to be kept*. The spools are, as a matter of course, of glass.

You also must have two strips of a 5 per cent. sterile iodoform-gauze, each contained in a separate test-tube and measuring each 6 inches wide by 4 feet in length. These strips are used for packing the vagina after the operation.

The preparation of the patient is a very important and much-neglected point, and, with the exception of those urgent cases to which I have already alluded, should be

carried out as follows: I begin one week before the day of operation to put the patient on a light and easily digestible diet. The bowels are moved every day by means of a wineglassful of Carabaña water, taken just before breakfast. This particular water is, *par excellence*, the one that should be employed, as it acts on the entire digestive system in a most admirable manner and is, consequently, well suited for the preparation of a patient who is to undergo a vaginal hysterectomy.

Besides this, I am decidedly of the opinion that intestinal antisepsis is strongly indicated, and for this purpose I prescribe 20 cgm. of naphtol β in a cachet, one to be taken after each meal. If the patient is nervous, and she generally is with good reason, I would recommend the exhibition of strychnin, 5 mgm. before each meal. Another combination that I often employ for this class of cases is as follows:

℞.—Strychninæ sulph. . . . 0.05
Tinct. valerian. 40.00
Syr. rubi idæi 50.00
Aq. dest. 70.00

M. S. — A tablespoonful to be taken after each meal.

A vaginal irrigation with two liters of a 1 per cent. solution of sulphonaphtol or of creolin as well as a hot bath should be given once a day for the four days preceding the operation.

On the evening before operation the pubis is shaven, a sublimate-bath given (3 grams of mercuric chlorid to the bath), and a 1 : 1000 sublimate-compress is placed over the abdomen and vulva and the patient put to bed.

At six the next morning the patient is given a cup of hot coffee and two tablespoonfuls of cognac, and an injection of 1 cgm. of morphin combined with half a mgm. of atropin is given subcutaneously a quarter of an hour before beginning the narcosis.

I will not insist on the asepsis of the instruments, hands, field of operation, etc., as they are the same as for any major or minor operation. In other words, they must be perfect. In the next lecture I shall speak of the technic of vaginal hysterectomy, the accidents that may occur during its execution, and, lastly, the ultimate results.

LECTURE II.

GENTLEMEN: It is difficult to state precisely the average time that will be necessary for performing a vaginal hysterectomy, for it depends on two principal factors—on the one hand are the operative difficulties, on the other the acquired skill for performing this operation. There are often unforeseen circumstances rendering the operation more difficult to perform than was expected.

So soon as everything is ready for the operation the anesthetic is given. The room in which the operation is to be done should be kept at a temperature of about 78° F., thus avoiding any chilling of the patient. The woman is placed in the lithotomy-position. The operator should be seated on a low chair, so that the light may be good all over the field of operation. As you must see, a good light is absolutely necessary, for you are working in a cavity, so to speak.

I now come to the important question of the assistants, of whom there are *two*, not including the one giving the anesthetic. In the first place, let me speak of the assistant on the right of the patient. He should be seated near the flank of the patient, on a high chair or stand, if he so prefers, but when seated he can remain immovable, and bend easier when necessary. His left arm passes above and the right below the patient's thigh, his chief duty being to handle the upper and lower valves, keeping them constantly parallel, and pushing them more deeply into the vagina when necessary. If the patient should make an effort at defecation, as will sometimes occur, the assistant on the right should press the lower valve downward, sufficiently to prevent the fecal matter from escaping. During the clamping of the *left* ligament (of the patient) this assistant will make this easier by drawing the uterus outward to his side. When the clamps are placed on the *right* ligament (his side), he should watch to see that the labia majora and minora, as well as the vaginal walls, are not included in the clamps. When the ligament on his side is cut, he should hold the clamps parallel to the axis of the vagina, but without drawing on them, and by holding them between the thumb and first finger he will not occlude the light. When you wind the gauze around the clamps, after packing the vagina, this assistant should hold the labia apart.

I now come to the assistant on the left (of the patient). He should stand by the side of the patient, and if the vaginal arteries must be ligated it is his duty to catch them up and cut the ligatures for the surgeon. If there is any need of pressing the abdominal walls, for instance, for pushing down the uterus, a fibroid, or the adnexa, or to prevent the escape of pus into the pelvis after accidental rupture, or a pyosalpinx, he should exercise this pressure delicately and according to the directions of the surgeon. He should also have charge of the tampons, and keep the field of operation perfectly dry. His other duties will be similar to those of the other assistant, as well as to hold the lateral valve on his side.

There are four methods of performing vaginal hysterectomy: 1. Péan's operation, or hysterectomy by morcellement; 2. Segond's, by central conoid excision, or hemisection. This method is nothing else than morcellement, but differs from that of Péan in that hemostasis, excepting for the uterine arteries, is consecutive instead of preventive. The advantage of this method is that when terminating the operation you are not hindered by clamps; the only ones in place are those placed at the beginning of the operation on the uterine arteries. 3. The method of Müller-Quénu. Müller advised cutting the uterus vertically into two halves after having turned it out, or simply drawing it down. Quénu then took up Müller's ideas and made the operative technic methodic by incising the uterus little by little until hemisection is complete. This is an excellent method, and most serviceable in certain cases in which the uterus adheres to the bladder or rectum, or when the organ is prevented coming down by cystic ovaries or pyosalpinx. 4. The last method, due to Doyen, is that of anterior hemisection, but the details of which I will pass by. I will now describe to you the various stages of vaginal hysterectomy as it usually occurs.

The *first stage* is the *drawing down* of the uterus. If the cervix is conic you should grasp it with a pair of hysterectomy-forceps; but if, on the contrary, it is large

you will do well to catch it with two pairs, one of which is placed on the anterior, the other on the posterior lip; by this means you will obtain a better hold on the organ and will not be so likely to wound it. I think that it is well to curet the endometrium, thus removing any possible source of infection from within, after which the cavity is packed with iodoform-gauze. As this little preliminary operation requires about three minutes, I think the time well spent. Or you may simply cauterize the endometrium with a Paquelin and pack with gauze, as is recommended by Poucel.

The *second stage* of the operation is the incision of the vagina. The labiæ and fourchet having been widely separated by the valves held by the assistant on the right, and the cervix finally caught by the forceps, you give the cervix a movement of rotation from left to right so that the knife will pass over the right side of the cervix round to the posterior aspect; the same rotation is then made from right to left, thus completing the circular incision. Segond's lateral incisions over the broad ligaments are next made and should measure about one centimeter in length. I cannot insist too strongly on the necessity of these lateral incisions, as the operating space gained by them is enormous.

The circular incision should be made *as near the os uteri as is possible*, for by so doing there is less danger of nicking the ureters.

If there be much bleeding from the vessels of the mucous membrane it is well to catch them up and ligate them. There are usually four of these small arteries, and if they bleed much they will be a bother during the remainder of the operation.

The *third stage* of the operation consists in freeing the uterus. When the organ is not adherent you should remove it without hemisection or morcellement, for in this way you will diminish the chances of infection. There is no absolute rule for rotating the uterus when this is necessary, because some organs will come down more easily from above, while others will be more readily turned out through the posterior culdesac. When the cellular tissue uniting the bladder to the uterus is very resistant you should employ the curved scissors, because if you use your finger there is more danger of perforating the bladder. You will do the same, if from a perimetritis there are adhesions between the rectum and the uterus.

After you have freed the anterior and posterior aspects of the uterus for about four or five centimeters, and as much as possible before you open the peritoneum, you should place the lower clamps on the broad ligaments. You should use the long clamps for this, so that at least 4 cm. of ligament are caught up. The clamps should be placed at about 1 cm. from the uterus, and as well-made clamps are about 7 mm. broad it follows that, under these circumstances, you run no risk of including the ureter in the jaws of the clamps, because the ureters are at least 2½ cm. from the uterus. The first clamp should not be placed blindly. The first two fingers are inserted behind the broad ligament and act as a guide for the clamp.

You then cut the ligament *up to the end of the clamp*, and then the uterus will gradually come down in a remarkable manner. After this you draw down the uterus and open the culdesac. If the uterus is low enough to allow the first finger to hook the upper part of the broad ligament you place a short clamp from below upward, or from above downward, according to circumstances. The clamp will include in its grasp the uterine artery, the tube, and the ovarian ligament. If this clamp cannot be put on, you should ascertain if the uterus can be tipped forward, which is generally the case, or backward, and if one or the other is accomplished the instrument can be applied.

When the uterus will not descend, then you should perform either anterior hemisection or total median section or morcellement.

Anterior hemisection or total section will soon be master of the situation, and I can assure you that it is the greatest surprise to see how quickly the organ comes down after one of these maneuvers has been executed. And let me add that these sections are absolutely devoid of danger from hemorrhage.

The *fourth and last stage* of vaginal hysterectomy is the extirpation of the adnexa. When the tubes and ovaries are not adherent, delicate and firm traction should be employed. But if they resist, you should separate them with the greatest possible prudence. If they contain pus you must introduce tampons about them, so that these may receive the infectious material as fast as it runs out; and let me say that it is very difficult to detach a pyosalpinx without rupturing the sac.

Now if you find that the adhesions to the surrounding parts are very strong, especially if they are connected with the intestine, I would advise you to stop and go no further, and leave part of the pus-sac, after emptying all the pus, and excising as much of the nonadherent part as is possible.

After you once get the adnexa down you can then place a clamp on the upper part of the broad ligament, and the pedicle of the ovary and tube. When this is accomplished you separate the clamps into two clusters, those applied to the right and those to the left side. Then carefully look to see if hemostasis is complete, in which case you proceed as follows:

With a long forceps you pick up the end of one of the strips of iodoform-gauze, and carry this well above the ends of the clamps, in order to protect and support the intestine; then you pack in the rest of the strip not too tightly in the vagina. This gauze serves a double purpose; firstly, to prevent hemorrhage, and, secondly, to support the intestine. The second strip of gauze is then introduced in such a manner as to protect the vaginal walls from the contact of the clamps, as well as to prevent direct compression of the vulva. The clamps are then dressed in carbolized gauze, over which a sterilized napkin is placed, and the dressing is completed by a T-bandage.

I believe that I have omitted mentioning one particularly important point, and that is the emptying of the bladder just before beginning the operation, and again as soon as this is completed. Do not forget to do this.

I now come to the question of the after-treatment. The patient should be carefully transported to her bed, and placed with the head low, while a pillow is placed under the popliteal spaces in order to keep the thighs elevated and the legs flexed. A couple of soft towels are massed together and put under the clamps in order to support them.

I never employ a permanent catheter as some operators do, but have my patients sounded every eight hours

during the first day, and every six on the following days until the patient passes her water herself, which can generally be done as soon as the clamps are removed; in other words, after the first 48 hours.

A very good practice is that of Segond, who has an ice-bag placed on the patient's abdomen and kept there permanently for a few days. This is done not so much for the prevention of peritonitis as for its calming effect on the colic which you will often encounter in patients after this operation. I can recommend this practice, as it has done me good service, in controlling not only the colic, but reflex vomiting as well.

As to the feeding of the patient: You should only allow champagne and cracked ice for the first 24 hours, to allay the thirst. During the next two days continue the champagne and give bouillon, either cold or hot, according to the patient's desire.

The clamps are removed 48 hours after the operation, while the gauze should be removed on the fifth or sixth day. On the morning of the third day I order Rochelle powder, and when the bowels have moved I put the patient on milk and lime-water, equal parts, good claret, beef-juice, and light soup. I never allow solids in any form until the sixth day, and then a chop and dry bread may be given.

Six hours after the gauze is removed, an irrigation with a 1 per cent. solution of phenol is given, and should be continued once daily until all discharge has stopped. This usually is over by the fifteenth day, or in pus-cases by the twenty-first day.

I allow my patients to sit up in bed on the fourth or fifth day, and usually have them out of bed by the twelfth or fifteenth day after the operation, excepting in pus-cases and fibroid cases.

Now what is to be done if there should be a hemorrhage when you remove the clamps?

If it is slight, an oozing for example, do not under any circumstances try to apply a clamp. A vaginal gauze-packing is all that is necessary to control the bleeding.

But when the hemorrhage is severe, insert a Sims speculum, the patient being placed in the knee-chest position, as this insures plenty of light, and with mounted tampons you must endeavor to find the bleeding vessel, and, when this is found, place a clamp upon it, taking all necessary time, and, above all, do not work in the dark, as you will surely clamp some important organ along with this vessel if you do it blindly.

Sexual relations must not be begun until two months after the operation.

Regarding operative accidents: Even with the best operative care small vesical perforations may occur, even as late as eight or ten days after the operation. They probably are the result of the coming away of slough; but in all probability they are not due to pressure from the clamps, because Martin, of Berlin, who only employs ligatures, says that he has seen these small fistulæ appear during the first month. They get well of themselves, as a general thing. But if the fistula does not become obliterated it may be operated on; however, as Richelôt says, you should wait a little, firstly, because of its spontaneous closing up; and, secondly, on account of a too hasty operation.

Wounding the ureter during vaginal hysterectomy is exceedingly infrequent and will not occur if you will follow strictly what I have said regarding the vaginal incision and the application of the clamps. Among 400 vaginal hysterectomies performed for various lesions by Segond, the ureter was never wounded. Among 105 hysterectomies performed by Prof. Poucel, of Montpellier, only one case of uretero-vaginal fistula was observed, and this was greatly diminished by slight cauterizations with a Paquelin. In 139 more vaginal hysterectomies reported by Lafourcade, collected from the practice of various surgeons, the ureter was not injured in any case.

If your clamps are well made and tempered the chance of hemorrhage is very slight, if you will bear in mind what I said in the first lecture regarding the menses and general diseases.

I believe that in abdominal hysterectomy the intestine is wounded more frequently than in the operation under consideration. Poucel and Segond had only two cases out of a total of 405 vaginal hysterectomies in which the intestine was wounded, both occurring in the latter surgeon's practice.

Intestinal occlusion after vaginal hysterectomy is infrequent, and I am aware of only nine cases, one reported by Baudron and eight collected by Ashton. This accident was produced by the adhesions formed between the intestine and the borders of the vagina. The treatment is the formation of an artificial anus.

In debilitated subjects the sloughs always extend further than the tissue included in the grasp of the clamps, and this fact you must bear in mind when operating on weak patients, and apply the clamps *close to the uterus*, in order to prevent the slough reaching the ureter, then cut into the parenchyma of the organ when you divide the tissues.

Tuffier believes that utero-vaginal fistulæ are more often on the right side, and this is explained by Fournel by the fact that it is more difficult to apply the clamps to this side, because the separation of the uterus from the bladder is harder to accomplish and is usually incomplete.

Segond, Richelôt, and others believe that rectal fistulæ are due to the falling off of the sloughs.

One word more and I have finished. After vaginal hysterectomy the patients will, for a few months, complain of various troubles at the time of their menses. There are migraine, flushings, and, rarely, congestion of the breasts or liver, tinnitus aurium, etc. One of my patients was troubled by pain at each menstrual period for several months; the pain was seated in the place where her right ovary had been, was dull and lasted for three days each time, but this symptom subsided and she has been free from it now for some months.

Of course I have not covered the subject of vaginal hysterectomy in these two lectures; far from it. It has simply been my intention to mention some points on the subject that are not generally known or understood. Many other important questions relating to this splendid operation will come up for consideration before you this winter, and these remarks are simply intended as an introduction to the subject of removal of the genital organs by the vaginal route.

MEDICAL PROGRESS.

Hysterical Vomiting in a Child.—WOOD (*Australian Medical Journal*, vol. xvii, No. 10, p. 460) has reported the case of a girl, ten years old, who during convalescence from an attack of typhoid fever, at the age of seven years, began to vomit after taking food, and had so continued to do with varying intervals. Immediately after the swallowing of food there was complaint of pain passing through the chest from front to back. The patient would then cry and refuse to swallow any more; in a few minutes the pain would abate, and she would resume eating. If the patient vomited during the existence of the pain, this would at once disappear. On one occasion she spent a fortnight with a medical friend, who insisted on her sitting at the table and eating everything put before her, and under this treatment she improved very much, but a return home was followed by renewal of the disorder. The child was extremely emaciated, but presented no evidence of organic disease. On admission to the Children's Hospital she ate and drank everything for twenty-four hours without vomiting, but on the next day she began to vomit. The food was retained for about eight minutes; the child's face assumed a pained, nervous expression during its retention; then vomiting occurred. Everything that had been swallowed was returned in one gulp, and no retching followed. On applying the ear over the stomach the sound of fluid falling into the stomach heard normally could not be detected. A few days later a bougie was passed into the esophagus, and a slight obstruction encountered at the cardiac orifice of the stomach. This yielded easily, and on repassing the bougie a minute later it could not be discerned. For the succeeding three days the child ate everything with greediness; no vomiting occurred, and the bowels acted naturally, although enemata had been used constantly during the previous two years. The vomiting returned from time to time, but was checked temporarily by the passage of the bougie. There was considerable gain in weight. The child returned to her friends, but failed to retain her weight, suffering from dysphagia, but not from actual vomiting. Later she was sent to a private hospital, where she once more improved. Afterward she was placed in a school away from home, and while much better she still had difficulty in eating in the presence of strangers. A peculiar symptom developed during this time—the occurrence of cough in the recumbent posture. A large amount of frothy mucus would collect in the pharynx, through which the air passed noisily in and out. At the expulsion of the fluid relief occurred, but the series of events was many times repeated.

Pylephlebitis and Abscess of the Liver Consecutive to Typhoid Fever.—LANNOIS (*Revue de Médecine*, 1895, No. 11, p. 909) reports a case of typhoid fever in the sequence of which there developed pylephlebitis and multiple abscesses of the liver, in the pus of which typhoid-bacilli were found. From a study of this case and of the literature upon the subject, he concludes that the complication is an exceedingly rare one. From the pathologic point of view three varieties of abscess of this kind are to be recognized: (*a*) metastatic, the abscess originating from a focus of suppuration in some distant part of the body, especially in the subcutaneous tissue; (*b*) from typhoid ulceration of the biliary passages; (*c*) in consequence of pylephlebitis, secondary to the intestinal lesion.

Landry's Paralysis, with Recovery.—BEHREND (*Deutsche medicin. Wochenschrift*, 1895, No. 47, p. 774) points out the differences in view that exist as to the nature of so-called Landry's paralysis, and reports a case of bulbar type terminating in recovery. This occurred in a man, thirty-seven years old, who, a day after drinking a pint and a half of rum, noted a peculiar feeling of coldness in the mouth and throat as if he had swallowed ice, together with a sense of numbness referred to the chin and neck. In the course of two or three days paralysis developed successively in the legs, trunk, and arms, with difficulty in swallowing and disturbance of speech. The nutrition was preserved, the temperature was normal, and the sensorium was clear. The pupils were equal and reacted sluggishly. There was diplopia due to paresis of both abducens muscles. Accommodation was not affected and the eye-grounds were normal. Hearing also was not deranged. In the cutaneous area between the lower lip and the hyoid bone sensibility was impaired. The expression was somewhat fixed in the distribution of the facial nerve, and the naso-labial folds were but feebly defined. The patient was unable to whistle. The tongue was protruded in the median line. There was some difficulty in chewing, and fluids drunk returned through the nose, a portion entering the larynx. The palatine velum was paretic. Pressure upon the spinal column and upon the nerve-trunks was unattended with pain. The knee-jerks could not be elicited. The electric irritability of the paralyzed muscles was preserved throughout. The sphincters were not involved. The spleen was not enlarged, and the remaining viscera presented no abnormality. The condition of the patient grew progressively worse and a fatal issue was feared; but, finally, improvement set in, and in the course of two months advanced to ultimate recovery. Treatment included warm baths, injections of strychnin and of camphor, and feeble induced currents.

Precocious Puberty.—At a recent meeting of the Clinical Society of London, CAMPBELL (*Medical Press and Circular*, No. 2591, p. 551) showed a lad, fourteen years of age, who had been under observation for upward of ten years. When only fifteen months old the mother had noticed that hair was beginning to grow on the pubes and that the external genitals were abnormally large; at two years of age they were fully developed and had not materially changed in the following years. The boy had at times manifested great sexual excitement. Between four and seven years of age he had frequent discharges of seminal fluid, but it had not been determined that this had contained spermatazoa. The muscular development was remarkable, the child having the muscles of a man of twenty-five or thirty. He had been in the habit of being shaved for several year. His education was defective from failure to attend school.

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SATURDAY, DECEMBER 28, 1895.

A FAREWELL WORD.

WITH this number THE MEDICAL NEWS leaves Philadelphia and passes out of its present editorial control. On January 1st, for business-reasons, the publishers will transfer the publication and editorial offices to New York City. The address of Dr. J. Riddle Goffe, the incoming editor, is Constable Building, Fifth Avenue and Eighteenth Street, New York City, to whom all editorial communications should henceforth be addressed.[1]

In severing relations with his contributors and collaborators the retiring editor deeply regrets the necessity of doing so, because whatever of unpleasantness and labor the office may have brought to him it has been the means of bringing a much larger share of things good beyond valuing—the friendship and sympathy, for example, of many noble men, and a clearer comprehension of the real dignity and loyalty of the great medical profession. There may be added the satisfaction of the consciousness of having striven faithfully to administer the trust for the benefit of scientific and ethical medicine. Hundreds of cordial letters received attest a certain measure of success in realizing this ideal, and no reply can adequately express the sense of gratitude felt for numberless courtesies and kindnesses spontaneously extended.

[1] The address of Dr. Gould is 119 South Seventeenth Street, Philadelphia.

SOME CAUSES OF NEURASTHENIA HITHERTO LITTLE DISCUSSED.

THERE are causes—and important ones—of some of the graver forms of neurasthenia that deserve more than the passing attention hitherto vouchsafed them. Without attributing to these causes more than their just importance, we are inclined to believe that those that we may describe as the conditions of a faulty education—conditions that we shall presently attempt to particularize—exert a considerable influence in disturbing the equilibrium of the nervous system, in altering the "*Gemeingefühl*," or mental perspective in which the patient views himself and the accidents that affect his thoughts, feelings, movements; which alteration in the primary functions of the understanding is a fundamental condition of the graver forms of neurasthenia, *e. g.*, the "*folie du doute*," the *délire du toucher*, the phobias; in a word, all the curious obsessions met in these strange maladies.

The fact, for instance, that a careless habit, once formed and persisted in, such as negligence in dressing, washing the person, in correspondence, in duties of the household, such as turning off the gas, putting a lighted match out, etc., etc., may develop into the painful obsessions of the "*folie du doute*," has been stated nowhere more definitely than in a paper by Dr. Höstermann.[1]

There are ideas, he gives us to understand, which originally produced in the normal course of thought, may become *dominant* in consequence of some external causes or conditions, as, for instance, evil experiences, natural timidity, habits. . . . Careless, disordely habits, although, properly speaking, not to be reckoned among the *obsessions*, may become identified with them. The thought that the door has not been completely shut, that the match was thrown in the neighborhood of inflammable material, etc., etc., may recur often to the mind and cause a certain anxiety and unrest, whence comes a desire repeatedly to observe if the door is really shut, the match really put out. The mind in which these incipient obsessions are produced is characteristically heedless. It is incapable at the moment of any particular action of strict attention. There is,

[1] Ueber Zwangsvorstellungen, Laehr's Zeitschrift, 1885, Bd. 41, p. 25.

therefore, the recollection of the thing done, but not of its attending circumstances.

Such heedlessness breeds accidents and their disagreeable consequences; which, in turn, may cause a fright, and, given an unusually impressionable mind, a lasting effect (*psychische Erschütterung*);[1] and by a curious reaction the particular event is ever afterward repeated with intense concentration, and fear of grievous consequences (as happened in the first case), repeated not once, but hundreds of times to verify the same fact, namely, that no harm has resulted. It is usual, indeed, for obsessions to arise suddenly. The instances in literature are now innumerable in which the curious reader may find some of great interest.[2] We can here only give a general sketch of these anomalies. A nervous woman, hearing unexpectedly of the dangerous prevalence of germs, and brooding much thereon, begins to wash her hands repeatedly, hundreds of times daily, spends hours in her room brushing her clothes, books, furniture, etc. After shaking hands with a guest she is anxious and *distraite* until they are washed again. Infection may have taken place meanwhile; and she is miserable. When walking out, if she passes anyone too near, she is afraid lest she has caught some contagion, and at once returns home to purify herself. At communion she doubts her fitness to take the sacrament. Has she, perchance, committed the unpardonable sin? (Under such circumstances the agony is very severe, even to fainting.) At table she does not pass anything for fear of infecting others.

Sometimes, forgetting, she passes a dish, and is straightway troubled by the thought that her hands may have been poisoned. Did she not touch the matches in her room before coming down? The matches are made of phosphorus, and phosphorus is a poison. Perhaps she has already poisoned somebody through her heedlessness. She would like to throw the matches away, but is afraid lest they poison somebody else. In short, everything terrifies such patients. We have even known one who was afraid to breathe, except through an apparatus, for fear of destroying the *animalculæ* which, it is said, exist in the air in great numbers.

It is a painful malady, though nothing in the experience of alienists is, perhaps, more curious and interesting. Krafft-Ebing,[1] to whom we are indebted for some of the most elaborate studies of this disorder, has given us many instances of obsessions arising from evil or shocking conditions in the life of a patient. "The most powerful causes," he says, "of imperative ideas (Zwangsvorstellungen) are impressions that intensely affect the mind and feelings by exciting ideas that persist until they become fixed in the fancy, wholly occupying it."[2] The subject of such obsessions are usually impressionable people of neuropathic constitution.

Impressions so powerful come early in the life of a patient. They are frequently made by the conditions of that life. One of the very best examples of the truth of this remark is to be found in Esquirol.[3]

In this case, a child—a little girl—wished to murder her step-mother; and had made the attempt with all the strength and passion she possessed. The idea had been produced in her mind by hearing the parents of her father discuss, somewhat too violently, the second marriage of their son. The examination of the child by Esquirol at Charenton revealed no dislike of the step-mother on any other grounds. No ill-treatment was alleged. The idea showed itself as a real obsession, with the uncontrollable impulse to murder. Esquirol paid great attention to this case, and the full report of it in his works is worthy of careful study. Such a case was formerly classed as *moral insanity*. It seems now more properly to belong to those obsessions that, given a neuropathic heredity, may develop from unfavorable moral conditions[4] (*Neurasthenisches Irresein*).[5]

A case of a milder description, in which the obsessions are distinctly of neurasthenic origin, is given by Dr. Thomsen, of Bonn. (*Archiv für Psychiatrie*, 1895, Bd. 27.) What is most interesting and apropos about this, is the fact that the patient, an intelligent lad of 16, himself described his

[1] Cf. Prof. L. Meyer: Ueber Intentions-psychosen, Archiv für Psychiatrie, 1888, Bd. 20.

The *Intentions-psychosen*, which are but conditions of neurasthenia, are probably caused in this way.

[2] Krafft-Ebing: Vierteljahrschrift für ger. Med., xii, p. 147. Beiträge, etc., Erlangen, 1867. Le Grand du Saulle. *La folie du doute*. Esquirol: Maladies Mentales. Henke's Zeitschrift, xx, p. 429. Delasiauve: Journal de Méd. Mentale, 1865, 333. Marc-Ideler, i, 166; ii, 288. Spielmann: Diagnostik, p. 499. Paul Aubry: Contagion du Meutre, 1894. Wille: Archiv für Psychiatrie, xii, 4. Cazauvieihl: Annales d'hyg., xvi, 123; and *passim*.

[1] Laehr's Zeitschrift, Bd. xxxv.

[2] Vierteljahrschrift für ger. Med., 1870, Bd. xii, p. 144.

[3] Des maladies mentales, i, ii, p. 116.

[4] Krafft-Ebing: Der Psychopathologie, p. 299.

[5] Kraepelin: Lehrbuch, p. 477. Le Grand du Saulle: La folie devant les tribunaux, p. 538.

étourderie to "ill-breeding." Any attempt to correct him, any interruption of the current of his ideas in society, at home, about his avocations, would bring on a convulsive attack, such as has rarely been observed; "the eyes are turned to the right, the face twitches violently, the tongue protrudes, the foot stamps, he beats his neck with his right hand, uttering all the while abusive expressions," etc., etc.

This interesting case brings into clear relief the progression of the various stages of the disease, which, beginning in a neurotic child, from the early want of self-control, develops into incurable disorder. What better illustration is there to show the necessity of early inculcating a useful habit of restraining and curbing the passions and the excesses of the childish temperament if left to itself? And here we get a clue of no little importance, as it seems to us, to the great prevalence of neurasthenia in this country. The extreme social liberty enjoyed by the youth of both sexes is a cause of it, a social liberty that leaves the child too much to itself, rendering it impatient of control where some restraint is probably necessary to prevent the extremes of joy, grief, anger—a régime which, if continued long enough, is quite sufficient to vitiate the nervous system, to produce in it and the will the instability, the excitability combined with weakness, the alteration of the *Gemeingefühl*, that, as we have said, are fundamental conditions of neurasthenia, if properly understood.

THE BACTERIOLOGY OF THE HEALTHY NOSE.

THERE has been considerable divergence of view as to the presence or absence, and as to the abundance or scantiness, of microorganisms in the nose of healthy persons. Some of the investigations into this subject have been defective in failing to make a distinction between the entrance to the nasal cavity and its interior. In fact, it was for a long time assumed that the nose was a natural depository for microorganisms, but this opinion was based upon inadequate or untrustworthy evidence.

One of the first studies of the bacteria in the healthy nose was published by Jonathan Wright, of Brooklyn, in 1889, who found present a variety of microorganisms, and whose observations were confirmed by those of numerous other investigators; but none of these states that precautions were taken to avoid contamination from the vibrissæ or other structures of the nasal vestibules.

In the course of a series of researches into the bacteriology of the upper air-passages, Thomson and Hewlett[1] have determined that only exceptionally are microorganisms to be obtained from the mucous membrane of the healthy nose, the interior of the nasal cavity being in the great majority of cases perfectly aseptic. They found, however, that the vestibules of the nares, the vibrissæ lining them, and all crusts formed in them, generally swarm with bacteria. These experiments were conducted with great care, and every precaution was taken to eliminate all complicating factors and elements of doubt and to insure accuracy of result. No attempt was made to differentiate the organisms that were found present, the immediate object of the investigation being to determine their presence and numbers.

Of twenty-seven cultures made from the vestibulum naris, not one remained sterile; in three, a few colonies only developed; in three, from ten to twenty; and in twenty-one the growth was abundant. Microorganisms were found in all of fourteen cover-glass preparations from crusts or mucus; in two, they were scanty; and in twelve, abundant. Of seventy-six cultures made from the interior of the nose, sixty-four remained absolutely sterile; in seven, there was a scanty growth; in two, there were more than twenty colonies. In none of the twelve instances in which growth took place could this be called abundant, or were the colonies innumerable. Of thirty cover-glass preparations made from the nasal mucus, twenty-three showed no microorganism whatever; in five, a few organisms were found; and in two, they were numerous.

Among the whole number of one-hundred-and-fifty observations, in only three instances was there a visible quantity of dust on the nasal mucous membrane. It was found that in the rare cases in which dust is visible within the nose, it is usually deposited on the anterior portion of the septum or the anterior extremity of the middle turbinal.

The experiments from which the data recited were obtained were made upon thirteen individuals, varying in age from sixteen to thirty-six years, and who were on the whole up to the normal standard of health as regards the nose. Only seven, however, had never complained of nasal troubles. Of

[1] "Microorganisms in the Healthy Nose." Reprint, Medico-Chirurgical Transactions, London, 1895.

the whole number, three were females and three males examined in study-air; seven males were examined in the laboratory, where they had frequently spent one or two hours before submitting to examination. Microorganisms were encountered among the latter in much larger number than among the former.

This valuable investigation from which we have so liberally quoted closes with the following summary:

In all bacterioscopic investigations of the nasal fossæ, in all researches as to the action of the nasal mucus, etc., a clear distinction must be made between the vestibule of the nose and the proper mucous cavity. The former is lined with skin and is furnished with hairs and with sudoriferous and sebaceous glands; it is not a part of the nasal cavity proper, but only leads to it. The neglect of this distinction may account for the discrepancies in previous observations on the subject. Avoidance of contamination with the lining of the vestibule is difficult even when this source of error has been realized. The dust and crusts of mucus and *débris* deposited among the vibrissæ of healthy subjects are never free from microorganisms, which are as a rule abundant. The reverse is true of the Schneiderian membrane. While microorganisms must occasionally be present here, they are, under normal conditions, never plentiful and often entirely wanting. The occurrence of pathogenic organisms must be so infrequent that their presence in the pituitary membrane must be regarded as quite exceptional.

EDITORIAL COMMENTS.

The Color of Sin.—Where would we poor physicians and scientists be if it weren't for the newspapers? They are the true pioneers of scientific and medical progress nowadays, and we have all we can do to keep up with their rapid strides. One of them has just heralded a most brilliant advance, no less than an absolute physiologic test of guilt. It has discovered a scientist who has discovered that the various human emotions and passions, good and bad, each produce definite chemic secretions, which act upon the brain and cause vice or virtue, as the case may be, and are excreted by the skin in the perspiration, where they may be recognized by chemic tests. His name is Gates, and he claims to have isolated and distinguished no less than forty distinct "emotion-products." The products of evil and sinful emotions are "poisonous," while those of good and happy impulses are "life-producing" in their nature. This may in some measure account for the notoriously short lives of evil-doers, and furnishes a physical explanation of the pangs of remorse. "The worst of all these secretions is that of guilt"; and Dr. Gates' crowning discovery is that if a small amount of the perspiration of a person "suffering from conscious guilt," be placed in a test-tube and a few drops of selenic acid added, a pink color will immediately appear. Hence he is led to declare that the true color of sin is pink, and that Isaiah was merely indulging in rhetoric exaggeration when he spoke of it as "scarlet." How striking that Isaiah could come so extraordinarily close to the mark without even a test-tube to use in his experiments, and, of course, without selenic acid; and in a poetic composition, too! The Scriptural term "scarlet woman" is also found peculiarly apropos, indicating as it does a high grade of depravity. Positively another scientific verification of the verbal inspiration of Scripture!

But there is a fatal defect in this theory which does not appear to have occurred to the author, and that is that possibly these "products" themselves are the *cause* of the various emotions and their resulting virtuous or vicious action, and not the *effect*. May they not be due to some toxin or germ which attacks the body from without?

This would be something like a discovery; for then, by isolating the germ, it could be attacked in its native lair, cultures made for inoculation-purposes, and children vaccinated for murder, theft, and envy, as they are now for smallpox and diphtheria. Even if this should not be the case, as the products of the good and happy emotions are "life-promoting"—for instance, "laugh and grow fat"—why not collect them from the perspiration of happy and virtuous persons and inject them into the tissues of the criminal and the hypochondriac? May we not have here a scientific explanation of the well-known "healing-touch?" At all events, "honest sweat" has apparently not been ranked at all too high as a moral influence.

This discovery will be a great aid and comfort to the waning fortunes of the Lombroso school of criminal anthropologists, for it is just the kind of a straw upon which they love to build their most magnificent, if somewhat top-heavy, edifices. But it is a sad shock to our poetic sentiments to find that pink, which we have always somehow associated with the dawn, the moss-rose, and the blushing cheek of the sweet girl-graduate, is really the livery of sin. But such are the ruthless disillusionments of science.

The Newspaper-doctor.—The evils of hospitalism do not end with the direct result and the single offence. The advertising doctor and newspaper-medicine are its legitimate offspring. An Eastern city has recently suffered with an attack of acute hospitalism, and now comes the sequel. In this busy town there was a short time ago organized a new hospital, upon the staff of which was placed an irregular, not to say a disreputable, practitioner. The better men protested and declined such association, but without avail. The reprehensible selection of the board of managers of the hospital was only the beginning of worse things. In the local newspaper of a recent date, we find an advance notice of the performance "*in the presence of a number of invited people*," of a remarkable operation of "skin-grafting," in which "the skin of a Belgian hare will be engrafted upon the leg" of a patient who courageously offered himself, as a sacrifice if need be, upon the altar of science.

A detailed account of the successive steps of the preparatory treatment and of the operation itself accompanies this announcement, and editorially expression is given to the hope that the operation will be successful, "primarily for the patient's benefit and besides for the advancement of the science and *the fame of the physicians who will engage in the operation.*" In the account of the operation in the newspaper of the following day, it is stated that the patient "was removed to the sick ward with a live hare glued to his right leg. The only other person present at the operation, beside the physicians and white-hooded nurses, was Dr. ———." The question naturally arises how, in the absence of the ubiquitous reporter, such detailed description of the procedures adopted found its way into public print—whether through telepathy, telephony, or telegraphy, or through verbal or written communication. Under any circumstances the whole business is discreditable to the individuals concerned and an affront to the profession at large. Offences of this character can only be prevented by heroic treatment.

Business Enterprise is admirably illustrated in the ingenuity of the advertiser in our daily papers. Two instances have come to our notice within a week. To a big omnium-gatherum store in Baltimore belongs the honor of selling the medical service of "one of Baltimore's prominent doctors, a graduate of the Maryland University, who has practised among you for 11 years," etc. "He will accept our tickets for a visit any time you see fit to call him, day or night. We shall sell these tickets for 29 cents each. When the Doctor calls all you have to pay is the ticket you bought of us for 29 cents. These tickets are good for one year, and you can get as many as you wish to-day for 29 cents, and the Doctor will accept one ticket for each visit. It makes no matter what we pay the Doctor; you only pay 29 cents for a visit."

To Philadelphia is due the credit of another scheme. It seems to start from the doctor's office, but all the soda-water, crockery, and bric-a-brac drug-stores of the city are enumerated as filling this physician's prescriptions for 25 cents, and the "medical" man gives the "medical" advice and the "prescription" absolutely "free-gratis-for-nothing." Ponder for one minute the mental and moral conditions of these drug-store, grocery, and doctor men!

Information is desired concerning the "American Association of Physicians and Surgeons." We have before us the flaming page-advertisement of a newspaper-doctor who cures Bright's disease by "his great specific," etc., and who signs himself "Vice-President" (should not the hyphen be left out here?) "of Pennsylvania of the American Association of Physicians and Surgeons." Can any correspondent give us some information concerning this medical society?

Tuberculous and Tubercular.—The NEWS has for several years discriminated in the use of the adjectives *tuberculous* and *tubercular*, applying the former to conditions related to the specific process, tuberculosis, and the latter to the histologic formation known as a tubercle. We are glad to find our position sustained by the *Lancet*, which makes an earnest plea for the practical adoption of this distinction, in order to insure lucidity and unambiguity of expression.

REVIEWS.

A MANUAL OF OPERATIVE SURGERY. By LEWIS A. STIMSON, B.A., M.D., Professor of Clinical Surgery in the University of the City of New York. New (third) edition. In one royal 12mo volume of 614 pages, with 306 illustrations. Cloth, $3.75. Philadelphia: Lea Brothers & Co., Publishers, 1895.

THE arrangement of this edition is almost the same as that of the previous issue, but the additions to the book have been very numerous. Dr. Stimson has been largely aided in the preparation of the manuscript by Dr. Rogers, to whom, indeed, he has given full credit, both upon the title-page and in the preface. Among the new operations introduced in this edition are trephining for suppuration within the cranium due to middle-ear disease, puncture of the lateral ventricles of the brain, intracranial neurectomy for neuralgia, tenorrhaphy, open suture of fracture of the patella, laminectomy, the surgery of the thyroid gland, and many abdominal operations. The article on operations for the radical cure of hernia has been very much expanded in accordance with the progress in this branch of surgery. The new cuts introduced in this edition are numerous, and constitute a distinct addition to the text.

The article on the operative reduction of old luxations of the elbow is a suggestive one, and recalls the paper of Dr. Stimson on this subject, which appeared as a journal-article some years ago. The illustrations of cerebral localization taken from Starr are unusually satisfactory.

The conciseness of the descriptions may seem to some readers a disadvantage, since students and young physicians may find that it requires a certain degree of knowledge of the topics to make the methods advised sufficiently clear. So much valuable information is, however, contained in the volume, which is a small one, that the criticism, though in the main true, does not detract from the real value of this guide to operative surgery. Conciseness is so seldom found in medical textbooks that it is refreshing to find it here illustrated in its best form.

The directions for preparing aseptic materials for operations may be rather difficult for the general practitioner in country districts to carry out, but they are simple, easily understood, and avoid the elaborate details which have sometimes made antiseptic surgery a bugbear to those living at a distance from medical centers.

In this, as in all books, omissions are occasionally found of matters which it would seem ought to be included. Among these may be mentioned the omission of the use of cocain by incarceration for local anesthesia, as well as the infiltration-method of producing anesthesia advocated by Schleich. The fact that the latter is rather a new suggestion probably accounts for its not being mentioned. Less attention seems to be directed to the Esmarch method of producing artificial anemia and preventing hemorrhage than would be expected. The Petit tourniquet seems to be given an unnecessary and unwise prominence. It is almost a relic of the surgery of bygone days.

Stimson's *Operative Surgery* has always been a fa-

vorite with us, as it doubtless has been with many teachers and students of surgery. The new edition will sustain the reputation of the book, and add to the debt which the profession owes to the author and his less well-known collaborator, to whom English-speaking physicians are also indebted for the translation of Tillmanns' *Principles of Surgery*.

PEDIATRICS, THE HYGIENIC AND MEDICAL TREATMENT OF CHILDREN. By THOMAS MORGAN ROTCH, M.D., Professor of the Diseases of Children, Harvard University. Philadelphia: J. B. Lippincott Company, 1896.

IT is to be regretted that Prof. Rotch has chosen to cast his work in the form of a series of clinical lectures, which, though affording opportunity for the presentation of an enormous amount of clinical material and illustrations of cases, has naturally called for much of the unnecessary and tiresome verbiage of the lecture-room to keep up the illusion. Presumably the book is an elaborated report of the author's lectures to his classes, for to this method of compilation we must attribute the colloquial style and not infrequent inelegancies of expression to be noted throughout the volume. Judicious condensation in the matter of clinical histories might have been employed with decided advantage, and have allowed greater space for a subject like insanity, which has evidently been slighted for want of room.

Despite these drawbacks in the literary execution of the work, there is so much valuable material presented that the professional success of the volume is assured.

The results of Dr. Rotch's original work are most conspicuously recorded in the earlier pages which cover the whole period of infancy. The Infant at Term is a notable chapter presenting briefly and concisely much valuable material to be found in no similar work with which we are acquainted. Normal Development is also noteworthy for a like reason; but it is upon the section on Feeding that the peculiar value of Dr. Rotch's book will pre-eminently depend. This subject is treated at unusual length and with masterly skill, as was to be expected from Dr. Rotch's previously well-known contributions on this branch of pediatrics. The workings of the Walker-Gordon Milk-laboratory are here fully explained, and the methods of combining milk-prescriptions are completely set forth. As an addendum to this section that on Premature Infants demands praise for its valuable data and scientific methods of dealing with this long-neglected, because imperfectly understood, class of cases. The section on the Blood in Infancy and Childhood is likewise of unusual value. It embodies much original observation and presents a comprehensive view of the present status of knowledge of the blood in diseased conditions in early life. The section on Diseases of the Nervous System and the Myopathies occupies nearly two-hundred pages and is enriched with numerous photographic reproductions from the author's own practice. The remaining sections are well done, but call for no further special mention.

From the bookmaker's point of view the volume is not up to the standard of the illustrated medical textbook of to-day. The half-tone cuts in the text, as a rule, are indistinct or are spoiled by the quality of the paper—a fact which is strikingly emphasized by the contrast afforded by a number of inserted plates in the section on diseases of the intestine, which are printed on suitable plate-paper. The colored plates also are far from accurate in their tints, though special claims are made for them in the preface. An index of 17½ pages finishes the volume. It is unnecessary to say that for a technical work of over 1100 pages the volume is totally inadequate and necessarily very incomplete.

SURGICAL PATHOLOGY AND THERAPEUTICS. By JOHN COLLINS WARREN, M.D., Professor of Surgery in Harvard University. Philadelphia: W. B. Saunders, 1895.

THE work before us is a notable production. It contains some 800 pages. The illustrations are original, numerous, extremely handsome, and the book is more than worthy of them. It is evidently the product of years of patient study and laborious observation, and every line of it shows the comprehensive grasp of the scholar and philosophic thinker, and the rigid common sense of the practical operating surgeon.

The initial chapter deals with Bacteriology, and is one of the best and clearest of the numerous brief dissertations upon this difficult and most important subject. Here as elsewhere definitions are commendably brief, accurate, and clear. Hyperemia is next discussed and then Inflammation. Warren considers inflammation a condition, not a disease—not an increase of nutrition, but a diminution and perversion of nutrition, and he holds that the cellular elements of inflammation come from the cells of the part. He compares inflammation to a forest fire, which destroys but does not repair; though in its rage it carries destruction, it sweeps away also the pests which prey upon vegetation, and leaves in the ashes conditions and materials which favor a new growth of timber. Inflammation is set forth under the heads of Simple and Infective, the latter including Suppuration, Ulceration, Abscess, Fistulæ, Boils, Carbuncles, and Osteomyelitis, which last-named disease, the author truly asserts, causes most cases of necrosis. In treating extensive losses of bone from necrosis, Warren commends Schede's method (filling with a blood-clot) and Senn's method (filling with chips of decalcified bone).

In the chapter on Repair the author claims that repair need not be inflammation, but results rather from the power of renewal of undestroyed tissue. In repair cells which multiply by karyokinesis fill the leading rôle, and leukocytes play an unimportant part. Gangrene is fully considered, and Shock is studied in one of the most scientific of modern articles. The author differs from the view of Fisher and Gross that shock is a reflex vasomotor paresis, and gives adhesion to the belief of Hodge and Grœningen that it is a condition of fatigue and exhaustion of the ganglia of the cord and medulla.

The next sections deal with Fever, Surgical Fevers, Septicemia, Pyemia, Erysipelas, Hospital Gangrene, Tetanus. It is shown that the curative effects of tetanus-antitoxin do not fulfil anticipations; most reported cases are seen to be chronic cases, and the power of this agent over acute tetanus is doubtful. In the article upon Hydrophobia the truth of Pasteur's method is considered as proved. Next come articles upon Actinomycosis, Anthrax, Glanders, Snake-bite, Tuberculosis, Dis-

eases of Bone, Tumors, Aseptic and Antiseptic Surgery. Appended to the book we find set forth the blood-serum therapy for rabies, the preparation of erysipelas-toxin, and other valuable information.

A pleasing thing about this book is its scholarly and literary flavor, a flavor too often absent in medical works. Any Warren of Harvard has given bonds to greatness, and we cannot pay the book of John Collins Warren a higher compliment than to say that it is entirely worthy of his name and of his chair.

SURGERY: A PRACTICAL TREATISE, WITH SPECIAL REFERENCE TO TREATMENT. By C. W. MANSELL MOULLIN, M.A., M.D. Oxon. Assisted by various writers on special subjects. With 623 illustrations. Third American edition. Revised and edited by JOHN B. HAMILTON, M.D., LL.D. Philadelphia: P. Blakiston, Son & Co., 1895.

IF excellence of a book may be measured by popularity, then *Moullin's Surgery* must be so classed. Two American editions have been consumed since 1891, and now we have before us a third. This, like the second edition, has passed under the able editorship of Dr. John B. Hamilton, which fact by itself is ample guarantee of the primary worth of the book, as well as of its being properly modernized and fitted for the needs of the American practitioner and student. As the work of the editor has been placed in brackets, it is easy to see to what pains he has been to render the volume as comprehensive as possible. It has been found necessary to make a very general revision of certain parts, and to add much new material and many new illustrations in order to accomplish this result. While the claim of the preface that the book is "quite up to the date of publication" (October, 1895), as "it has taken but six weeks to pass through the press," is scarcely justified by examination of certain portions, yet, upon the whole, the result of the new revision is very satisfactory, and the work is certain to retain its position in the front rank of standard surgical books for study and reference. The colored plates of bacteria and tumors are beautiful, and many of the newly added original illustrations are of great value. The volume as a bookmaker's product is notably pleasing in all respects.

THE PRINCIPLES AND PRACTICE OF MEDICINE. DESIGNED FOR THE USE OF PRACTITIONERS AND STUDENTS OF MEDICINE. By WILLIAM OSLER, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine in the Johns Hopkins University and Physician-in-Chief to the Johns Hopkins Hospital, Baltimore, etc. Second edition. 8vo., pp. xviii, 1134. New York: D. Appleton & Co., 1895.

THE favorable reception accorded Osler's *Practice* and the exhaustion of a large edition within three years speak more forcibly than any written commentary. The book is one of the most meritorious recently published, and its worth is the basis of its popularity. The numerous changes that have been found necessary in the revision indicate the rapid strides that have been made and are constantly making in the domain of medicine. Sixty-five pages have been added to the text, and the illustrations have been increased six in number. The article on Typhoid Fever has been thoroughly revised and amplified. Of the Brand bath it is said that it "has steadily advanced in favor both in hospital and private practice, and in spite of the difficulties and the unpleasant features necessarily connected with it there is no plan of treatment which gives such results. In the hospitals which carry out a strict hydrotherapy the death-rate is about 7 per cent., while in other institutions the death-rate is from 10 to 15 per cent." The article on diphtheria has been almost doubled in length and materially modified. Recent additions to our etiologic knowledge have been incorporated, and the antitoxin-treatment has received due consideration. Extensive changes have been made in the articles on septicemia and pyemia, and the subject of malarial fever has been largely rewritten. Entirely new sections devoted to the bubonic plague, and to foot-and-mouth disease, have been added, and the whole group of infectious diseases has been brought up to date. Descriptions of infantile scurvy, of hemorrhagic diseases of the newborn, of eczema of the tongue, of buccal leukoplakia, of affections of the mesentery, of anuria, and of parasitic infusoria have also been added. The section on diseases of the nervous system has been elaborated by new text and helpful diagrams. In fact, alterations and additions have been made throughout the book wherever these were rendered necessary by the increasing changes and developments of medical progress, and the result has been to keep the work in the front rank of text-books for the student and of reference-books for the practitioner.

PHYSIOLOGY PRACTICUMS. EXPLICIT DIRECTIONS FOR EXAMINING PORTIONS OF THE CAT; THE HEART, EYE, AND BRAIN OF THE SHEEP, AS AN AID IN THE STUDY OF ELEMENTARY PHYSIOLOGY. By BURT G. WILDER, B.S., M.D., Professor of Physiology, Vertebrate Zoology, and Neurology in Cornell University, etc. Second edition, revised, with thirty figures. Published by the author. Presses of the Ithaca Journal, 1895.

SINCE physiology has become an experimental science, based largely on the facts of anatomy, it is highly desirable that all medical students, at the very beginning of their college-work and before entering on the study of physiologic phenomena, should be familiar with the general plan of organization of the human body. Inasmuch as this, at present, is impracticable, the study of the structure of some highly specialized animal-form should be insisted on as a necessary prerequisite. No animal presents so many advantages for a preliminary study in human anatomy as the cat; a practical acquaintance with the structure of this animal will afford the necessary data for a comprehension of the fundamental facts of physiology. To assist the student in this preparatory work, Prof. Wilder has, in his *Physiology Practicums*, given explicit directions for the examination of portions of the cat and of the head, eye, and brain of the sheep. It is safe to say that if the directions given by Prof. Wilder are faithfully followed the student will receive the best possible preparation for the subsequent study of human anatomy and for the comprehension of physiology. A teaching experience of twenty-five years has enabled Prof. Wilder to present

the subject in the most concise, explicit, and attractive manner, so that the student will have no difficulty in the conduct of his investigations. Every medical student at the beginning of his studies should provide himself with a copy of the *Practicums*, and conscientiously proceed to familiarize himself with its contents. The knowledge thus obtained and the technic acquired from this systematic dissection of the cat will be of inestimable value to the student in all his subsequent studies of anatomy and physiology. We are indebted to Prof. Wilder for this admirable guide, and trust that in the reorganization of the methods of education in our medical schools this preliminary work, as formulated by him, shall be regarded as an essential part of the curriculum.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE, FOR THE USE OF PHYSICIANS AND STUDENTS. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania, etc. Ninth edition, revised and corrected, with a colored plate and wood engravings. 8vo, pp. 276. Philadelphia: P. Blakiston, Son & Co., 1895.

GUIDE POUR L'EXAMEN PRATIQUE DE L'URINE, ETC. Par le DOCTEUR JAMES TYSON. Huitiéme edition, revue et corrigée. Traduction de MM. E. GAUDRELET and A. S. CLARKE. Large 8vo, pp. 170. Paris: Société d'Editions Scientifiques, 1895.

WE can perhaps scarcely do better in detailing the reasons that have rendered necessary nine editions of this well-known and very useful manual than to quote from the preface to the French translation of the eighth edition which appears almost simultaneously with the ninth American edition: "Among the few publications in English devoted exclusively to urine-analysis the *Guide to the Practical Examination of Urine, for the Use of Physicians and Students*, by Professor Tyson, of Philadelphia, by reason of its success in America and England—having passed through eight editions—commends itself favorably to the attention of the French medical profession. . . . By reason of the minute details into which the author enters in his description of analytic processes the work is a most excellent one. The simplicity of the methods described give to the work a practical value. The examination of urine from the chemic, physical, and physiologic points of view is treated as completely as possible in the limits of a manual intended for physicians and students. Practising physicians will find of value the succinct but lucid portrayal of the differential diagnosis of diseases of the kidney." Not many changes have been necessary in this ninth edition, and the work remains, as it has long been, a trustworthy and complete presentation of the subject with which it deals and a reliable guide in urine-analysis to the student and physician.

DIET IN SICKNESS AND HEALTH. By MRS. ERNEST HART, with an Introduction by Sir HENRY THOMPSON, F.R.C.S., M.B. Lond. 8vo., pp. 219. London: The Scientific Press, Limited, 1895.

THE author of this book, who is the wife of the distinguished editor of the *British Medical Journal*, and who is well-known for her interest and activity in behalf of the Irish people, has been a student of the Faculty of Medicine of Paris and of the London School of Medicine for Women, and has already made a number of contributions to the literature of physiology and pathology. She thus comes well equipped to the performance of her present task. Within the limits that she has allowed herself, Mrs. Hart has succinctly laid down the principles of digestion and nutrition, and indicated the lines along which a suitable dietary is to be selected, both in the prevention and in the treatment of disease. Extended consideration is given to the diet of diabetes and to that of gout, and in many places explicit directions are given as to the preparation of various articles of food and various food-combinations. The book is written in a pleasant and entertaining style and printed in clear, legible type, and should realize the hopes of its author in proving "useful to those who are sick and to those who have to nurse, feed, and prescribe for the sick, and that it will aid the healthy to preserve health."

PHYSICIANS' VISITING LIST FOR 1896. LINDSAY & BLAKISTON. Philadelphia: P. Blakiston, Son & Co.

CONCERNING this well-known visiting list the publishers mention several improvements in the new edition for 1896. More space has been allowed for writing the names and to the "memoranda page." A column has been added for the "amount" of the weekly visits, and a column for the "ledger page." The reading matter and memoranda pages have been rearranged and simplified. The lists for 75 and 100 patients will also have a special memoranda page as noted, and hereafter will come in two volumes only, dated from January to June and from July to December. This does away with the risk of losing the accounts of a whole year should the book be mislaid.

THE MEDICAL RECORD VISITING LIST OR PHYSICIANS' DIARY FOR 1896. New York: William Wood & Co.

CONCERNING this excellent book the preface says: "It has been revised to increase the amount of matter calculated to be useful in emergencies and eliminate such as might better be referred to in the physician's library. The most important change is in the list of remedies and their maximum doses in both apothecaries' and decimal systems, and the indication of such as are official in the United States."

NEWS ITEM.

Rush Monument Fund.—Dr. George H. Rohé, Secretary and Treasurer of the Rush Monument Committee, acknowledges the following additional subscriptions:

Dr. J. W. Russell	$1 00
Newark, N. J., Practitioners' Club, through Dr. J. D. Brumley . .	12 00
Dr. J. B. Hamilton, Chicago . .	43 00
Dr. J. L. Thompson, Indianapolis .	5 00
Dr. J. H. Kellogg, Battle Creek, Michigan	5 00
Rush Medical College, Chicago .	100 00
Interest	25 00
Previously reported	3357 39
Total	$3548 39

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